3.9 Noise

3.9.1 Introduction

This section describes the regulatory setting, environmental setting, and potential impacts of the Proposed Project related to noise. Maintenance activities under the current SMP bear great similarity to construction activities and have a similar potential for noise generation; therefore, they are treated as such for the purposes of this noise analysis.

Overview of Noise Concepts and Terminology

Noise can be defined as unwanted sound. Therefore, to understand noise impacts, it is important to understand some basic concepts regarding sound. Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because the difference in sound pressure between sounds at the lower and upper range of human hearing is so large, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called "A-weighting," written "dBA."

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terms used in this section:

- Sound is a vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism, such as the human ear or a microphone.
- Noise is sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- Decibel (dB) is a unit of measure of sound. It works on a logarithmic scale, which is calculated as the square of the ratio of the pressure amplitude of a sound to a reference sound pressure amplitude (20 micro-pascals).
- A-weighted decibel (dBA) is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Maximum sound level (Lmax) is the maximum sound level measured during the measurement period.
- Minimum sound level (Lmin) is the minimum sound level measured during the measurement period.

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- Equivalent sound level (Leq) is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy as a time-varying sound level during that same period of time.

- Percentile-exceeded sound level (Lxx) is the sound level exceeded a specific percentage of time during a specific time period. As an example, L10 is the sound level exceeded 10% of the time.

- Day-night level (L_{dn}) emphasizes the undesirability of noise occurring during the night. This is accomplished by adding 10 dB to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m.

- Community noise equivalent level (CNEL) is another way of emphasizing the undesirability of noise during the night, which adds 5 dB to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this analysis. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling (for an increase) or halving (for a decrease) the sound level. Table 3.9-1 presents example noise levels for common noise sources; the levels are measured adjacent to the source.

Table 3.9-1. Examples of Common Noise Levels

Source	Noise Level (dBA)
Weakest sound heard by average ear	0
Whisper	30
Normal conversation	60
Ringing telephone	80
Power lawnmower	90
Tractor	96
Hand drill	98
Bulldozer	105
Chain saw	110
Ambulance siren	120
Jet engine at takeoff	140
12-gauge shotgun blast	165
Source: National Institute of Safety and Health 2008	

Sensitivity

Sensitive receptors include residents, recreational users, children, recovering sick patients, and anyone else who would be disrupted by unwanted noise. Areas where stream maintenance activities take place may contain potential sensitive receptors to noise generation.

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An individual's reaction to noise is determined by the nature and volume of the noise itself as well as by the environment in which the noise occurs, and the individual's tolerance for noise. For example, individuals accustomed to noisy environments or use of loud equipment such as chainsaws are less likely to consider this noise to be intrusive than those who are not. Conversely, the use of chainsaws in areas with low ambient noise levels is more likely to be considered disruptive than usage in areas where noise levels are normally high.

3.9.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No commonly accepted federal thresholds exist for acceptable levels of noise from construction activities. The Federal Transit Administration (FTA) suggests the guidelines shown in Table 3.9-2 as reasonable criteria for the assessment of construction noise impacts.

Table 3.9-2. FTA-Suggested Construction Noise Criteria

	One-Hour Leq (dBA)	
Land Use	**Day**	**Night**
Residential	90	80
Commercial	100	100
Industrial	100	100
Source: Federal Transit Administration 1995		

State Plans, Policies, Regulations, and Laws

State Land Use Compatibility Standards for Community Noise

The California Government Code requires cities and counties to include a noise element in their general plans. The purpose of the noise element is to provide a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise. The State Office of Planning and Research has published general plan guidelines (California Governor's Office of Planning and Research 2003) that include guidelines for the compatible noise levels for various land uses, presented in Table 3.9-3.

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Table 3.9-3. State Land Use Compatibility Standards for Community Noise Environment

Land Use Category	Community Noise Exposure - L_{dn} or CNEL (db)						
	50	55	60	65	70	75	80
Residential – Low Density Single Family, Duplex, Mobile Homes							
Residential - Multi-Family							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: California Governor's Office of Planning and Research 2003

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Regional and Local Plans, Policies, Regulations, and Ordinances

Santa Clara County and each of the cities within the county have established policies and guidelines that aim to minimize the effects of noise on people through prescriptive construction standards, zoning restrictions, hours of operation, and suppression techniques. Noise level goals are defined that are assumed to be compatible with various land use types within each jurisdiction. However, all jurisdictions recognize that higher than standard noise levels will be generated from time to time by heavy equipment engaged in construction or maintenance activities. Because heavy-equipment noise is an unavoidable necessity particularly for public works projects, jurisdictions typically include wording in noise ordinances and elements exempting these short-term, temporary, higher noise levels from compliance with the overall standards for land uses. Noise standards and policies established by Santa Clara County and incorporated cities within the Project Area are summarized in Table 3.9-4 and further detailed in Appendix D.

Table 3.9-4. General Plan and Noise Ordinance Standards

Jurisdiction	Specific Noise Criteria
Santa Clara County	Operation of tools or construction equipment on weekdays and Saturdays not allowed between the hours of 7 p.m. and 7a.m. No operation allowed on Sundays or holidays except for emergency work. Mobile equipment must not result in a noise level in excess of 75dBA for single/two-family residential (SFR), 80dBA for multi-family residential (MFR), or 85 dBA for commercial areas.
City of Campbell	Powered equipment is limited to the hours of 8 a.m. and 7 p.m. Monday through Friday and between the hours of 9 a.m. and 6 p.m. Saturday, Sunday, and on national holidays. However, noise from public works and maintenance construction projects may be exempted by the city manager.
City of Cupertino	Construction activities are limited to daytime hours (7 a.m. to 8 p.m. Monday through Friday, and 9 a.m. and 6 p.m. Saturdays and Sundays). High-quality noise muffler and abatement devices must be installed and in good condition on all construction equipment, and no single device may produce a noise in excess of 87 dBA at a distance of 25 feet OR noise levels at nearby properties must not exceed 80 dBA. However, special exemptions may be granted by the noise control officer, which would include notification to nearby properties.
City of Gilroy	Construction equipment may only be operated between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and 9:00 a.m. and 7:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Exceptions may be granted by the chief building official.
City of Los Altos	Construction activities limited to the hours between 7:00 a.m. and 5:30 p.m. Monday through Friday and between 9:00 a.m. and 3:00 p.m. on Saturday in residential areas. In non-residential areas, construction can occur between 7:00 a.m. and 7:00 p.m. Monday through Friday and between 9:00 a.m. and 6:00 p.m. on Saturday. No construction work is permitted on Sunday or city holidays. Equipment may not be operated on holidays. Maximum permissible noise levels during daytime operation is 75 dBA for R1 zones, 80 dBA for PCF and R3 zones, and 85 dBA for OA and C zones.

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Table 3.9-4. General Plan and Noise Ordinance Standards

Jurisdiction	Specific Noise Criteria
Town of Los Altos Hills	Construction near residential areas is limited to the hours of 8:00 a.m. to 5:30 p.m. Monday through Friday. Construction is not permitted on Saturdays without a permit, and no construction is permitted on Sundays or public holidays.
Town of Los Gatos	Construction activities are limited to 8 a.m. to 8 p.m. on weekdays and 9 a.m. to 7 p.m. on weekends and holidays. No single device may produce a noise in excess of 85 dBA at a distance of 25 feet and the noise levels at nearby properties must not exceed 85 dBA. Use of powered equipment is not time-limited in commercial, industrial, or public spaces.
City of Milpitas	Noise associated with SMP exempted from noise ordinance as maintenance of utility facilities.
City of Monte Sereno	Construction activities are generally limited to 8 a.m. to 8 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays/public holidays. However, work not requiring a permit from the city is exempted from the time restrictions.
City of Morgan Hill	Construction activities are generally limited to 7 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. However, public work activities are exempted from the time restrictions.
City of Mountain View	Construction activities are limited to 7 a.m. to 6 p.m. on weekdays. No work is permitted on weekends or holidays without prior approval.
City of Palo Alto	Construction activities on non-residential areas are limited to the hours of 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 8 p.m. on Saturdays. Construction is not permitted on Sundays or public holidays. No single piece of equipment may produce a noise level in excess of 110 dBA at 25 feet, nor may noise level at any point outside of the property plane exceed 110 dBA. A sign must be posted at the entrance of the construction site indicating construction hours and violation penalties.
City of San Jose	Construction occurring within 500 feet of a residential unit is limited to the hours of 7 a.m. to 7 p.m. on weekdays. However, these time restrictions are limited only to construction activities requiring a permit from the city.
City of Saratoga	Construction activities permitted only between the hours of 7:30 a.m. and 6:00 p.m. on weekdays and between 9 a.m. to 5 p.m. on Saturdays in residential areas. No construction is permitted on holidays and on weekends in commercial areas. No individual piece of equipment may exceed a noise level of 83 dBA at a distance of 25 feet.
City of Santa Clara	Construction occurring within 300 feet of a residential area is generally limited to the hours of 7 a.m. to 6 p.m. on weekdays and 9 a.m. to 6 p.m. on Saturdays. Construction is not permitted on Sundays or holidays.
City of Sunnyvale	Construction activities permitted only between the hours of 7 a.m. and 6 p.m. on weekdays and between 8 a.m. to 5 p.m. on Saturdays. Construction is not permitted on Sundays or on national holidays.
Source: Data compiled by Horizon Water and Environment in 2011	

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3.9.3 Environmental Setting

Within the Project Area, background noise levels vary greatly from very low noise levels in the semi-rural western and eastern foothills to high noise levels in the urbanized Santa Clara Valley floor. Approximately 38 percent of the total creek miles within the Project Area flow through urban (residential, commercial, and industrial) areas and approximately 46 percent of creek miles within the Project Area flow through parkland or agricultural (open space) areas. Open space, agricultural, and recreational areas are anticipated to have fewer noise conflicts with proposed maintenance activities because relatively fewer sensitive receptors would exist. Approximately 73 percent of the total miles of creeks in the Pajaro River Basin are adjacent to natural open space and agricultural lands, compared with 34 percent of the total miles of creeks in the Santa Clara Basin.

The highest noise levels in the Project Area are in the vicinity of the San Jose International Airport. The noise environments of the north and central portions of Santa Clara Valley are heavily influenced by airplane takeoffs and landings. Noise monitoring conducted around the airport indicates that noise levels from aircraft alone exceed 65 dBA (CNEL).

Noise Sensitive Land Uses

Many of the streams maintained under the Proposed Project would be located in the vicinity of noise sensitive land uses. Given the extent of the Project Area, it is not plausible to identify the specific characteristics of every location that may be affected by the Proposed Project; however a brief synopsis of noise sensitive areas is provided below.

Recreational Areas

Some public parks and trails are located adjacent to areas where Proposed Project activities could occur. Some portions of recreational streamside trails are not as populated as other areas, and are located on the outskirts of urban areas. In less frequented trail reaches, it is possible for one person to travel for long periods of time without seeing other people. Ambient noise levels in this situation are predominantly characterized by the sounds of the natural environment. Conversely, many public parks and trails within the Project Area are located in urban and residential areas. During the summertime and particularly on weekends, congested conditions along streamside trails and parks are commonplace. In these areas, ambient noise reflects these human activities and may fluctuate seasonally.

Residential Areas

Proposed Project activities may take place adjacent to residential neighborhoods and homes. Residents in less-developed areas are potentially the most sensitive noise receptors within urban areas, as noise from adjacent waterway activities may be the only significant noise sources generated by human activity that affect these properties. Unlike recreational land uses, which are made up of transient user groups, residences are permanent dwellings. Thus, residents would be unable to avoid noise from adjacent land uses and would be exposed to them for longer periods of time.

The degree to which sound reaches residents from adjacent areas would depend on the type of activity being conducted, the distance from the noise source to the residence, and the

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materials from which the home was constructed. Though the county and some cities impose a minimum building setback from waterways to protect life and property, residences may still be subject to loud or continuous noise from users of these waterways.

Other Areas

Noise sensitive land uses identified in the California Government Code include residences, recreation areas, schools, hospitals, nursing homes, churches, libraries, and long-term medical or mental care facilities. In addition to recreational and residential areas, Proposed Project activities may occur near any of these other sensitive land uses. As described above, the degree to which sound would reach these sensitive users would be dependent on a variety of factors. Seniors and others residing at hospitals, nursing homes, or long-term medical or mental care facilities would be anticipated to have longer noise exposure periods (similar to those in residential areas) because they would generally be unable to avoid noises from adjacent land uses. Schools, churches, or libraries would be used for shorter periods of time and may have noise exposure periods of shorter duration.

Land uses sensitive to noise generation are primarily those with an outdoor use component that includes an expectation of increased noise levels. Examples of sensitive land uses include backyards and gardens in residential areas, parks and open space reserves, outdoor shopping areas, and schoolyards and cemeteries. In these areas, excessive noise levels are a nuisance to people using outdoor facilities. Noise levels can normally be reduced for interior spaces through the use of modern construction techniques. Interior noise levels inside residences adjacent to creeks are typically less than 45 dBA CNEL with the windows closed because of the noise attenuation provided by walls and windows. However, outdoor areas cannot be easily shielded from high noise levels without the construction of noise barriers. In the Project Area, channels with a large extent (more than 3 miles) of adjacent residential land use are found in Adobe, Canoas, Matadero, Los Gatos, Permanente, Ross, San Francisquito, Lower Silver, Stevens, San Tomas Aquino, Saratoga, Sunnyvale East Channel, and Wildcat creeks, and the Guadalupe River.

3.9.4 Impact Analysis

Methodology

Impacts related to noise from the Proposed Project were analyzed quantitatively using noise sound levels measured in SCVWD's 2002 SMP EIR, for the various construction equipment and vehicles associated with proposed maintenance activities.

Data collected from the 2002 SMP EIR (Santa Clara Valley Water District 2002) were used to estimate noise exposure levels to sensitive receptors at a distance of 100 feet from the construction site. This data was used because noise generated by maintenance equipment is not believed to have changed substantially in the last 10 years. Contrarily, equipment may now be quieter and, as such, using the 2002 data provides a conservative analysis. To predict the noise levels at different distances, the methodology used in the 2002 SMP EIR treated the Proposed Project equipment as a point or stationary noise source and calculated noise levels based on the assumption that noise spreads out uniformly in waves from a source and attenuates (decrease in force and magnitude as it spreads) at a given rate per distance doubled. Noise attenuation from a point source was estimated based on the

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presence of "soft" non-reflective ground and intervening vegetation between the noise source and the receptor. Thus, the attenuation rate was estimated at 9dB for each doubling of distance, with further increases in attenuation because of air absorption over distances greater than 1,000 feet. Table 3.9-5 illustrates the noise level estimates from typical maintenance activity equipment:

Table 3.9-5: Typical Noise Associated with SMP Activities

Noise source	dBA at 100 feet	dBA at 50 feet
Excavator working from top of bank	67	76
Chainsaw	75	84
Mowers/ spray trucks/ weed-eaters	65-70	74-79
Excavator and truck working concurrently (bank stabilization-type projects)	68-73	74-79
Source: SCVWD 2002		

Any noise generated by proposed maintenance activities would be temporary. Typical maintenance activities would be short term, expected to last up to 10 days for sediment removal (although in certain cases they could last for several weeks or longer), and 8 days for bank stabilization. Vegetation management activities would be conducted on an ongoing basis, but would typically not occur in any given location for longer than a few days.

Criteria for Determining Significance

For the purposes of this analysis, the Proposed Project would result in a significant impact on noise if it would:

A. expose persons to or would generate noise levels in excess of standards established in the local general plans or noise ordinances, or applicable standards of other agencies;

B. expose persons to or generate excessive vibration or groundborne noise levels; or

C. result in a substantial temporary or permanent increase in ambient noise levels in the project vicinity above levels existing without the project

Noise levels associated with the Proposed Project were compared against local noise ordinance standards presented in Section 3.9.2, *Regulatory Setting* and summarized in Table 3.9-4. All Proposed Project-related noise would be temporary in nature; therefore, permanent noise impacts are not discussed further.

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Environmental Impacts

Impact NZ-1: Temporary Exposure of the Public to Noise Levels in Excess of City or County Standards (Significance Criterion A; Significant and Unavoidable)

SMP Update activities typically would involve the use of heavy machinery and equipment, such as bulldozers, excavators, dump trucks, gradalls (hydraulic, wheel-mounted backhoes often used with wide buckets for dressing earth slopes), tractor mowers, and hand-held devices (chainsaws, hand sprayers) that may expose the public to noise. Stream maintenance would occur on weekdays. In rare instances, work could be conducted on weekends; for instance, if the work window was about to end and SCVWD had to complete winterization of a site. As a standard operating procedure, the District would use sound barriers around stationary generators when working near homes, to decrease the noise because this equipment typically runs 24 hours a day. A greater description of the potential noise effects from the various primary SMP Update activities is provided next.

Sediment Removal and Reuse/Disposal

Heavy equipment would be operated from either the top of a bank, if accessible, or within a channel or canal during sediment removal activities. When working within a channel or canal, the slopes generally would serve as a noise barrier for sensitive receptors. Adjacent receptors would be somewhat less shielded from heavy equipment when operations occurred on the top of a bank; thus, the noise associated with work at this upper location would represent a more conservative estimation of effects.

As described in the 2002 SMP EIR, monitoring of a SCVWD excavator sited on the top of the bank and removing sediment from Lower Penitencia Creek channel recorded an Leq of approximately 67 dBA at 100 feet. Based on standard attenuation estimates, an excavator working 50 feet from a residential backyard with soft ground and intervening vegetation would generate 76 dBA. The SCVWD estimates that on average, sediment removal projects progress at a rate of 200-400 feet of creek channel per day. Therefore, a typical subdivision lot (60 feet wide) located 50 feet from the operating equipment would be subject to 73 dBA for 1 to 2 hours during sediment removal operations. As the equipment moved further along the channel, noise levels would attenuate until equivalent to the background noise levels and would no longer be perceptible. (SCVWD 2001)

Sediment reuse/disposal would involve similar types of equipment and would be anticipated to have similar impacts as those described above.

Vegetation Management

Of the proposed vegetation management methods, hand removal (including the use of chain saws and weed eaters) and mechanical removal (including mowing and discing) would have the highest potential to create elevated noise levels. Although chain saws produce noise levels of approximately 75 dBA at 100 feet (SCVWD 2002), this type of equipment would be used infrequently and only for short periods of time. Noise levels associated with equipment used in more moderate durations (such as weed-eaters, mowers, and herbicide spray trucks) are commonly in the range of 65-70 dBA at 100 feet (SCVWD 2002). The use of animals for grazing would only be conducted where permitted by local ordinances and

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policies, including noise ordinances, and this is not expected to be a significant source of noise.

Bank Stabilization

Noise levels associated with typical bank protection activities were analyzed in the 2002 SMP EIR. According to the data, noise levels ranged from 68 to 73 dBA at 100 feet with both a truck and excavator working concurrently. Based on standard attenuation, noise levels within 50 feet of working equipment are approximately 74 to 79 dBA. Depending on site-specific conditions of the Proposed Project activity, the SCVWD estimates that the range of progression for bank protection work typically would be between 20 to 40 feet per day. Therefore, the standard residential lot (60 feet wide) located within 50 feet of bank protection activities could experience noise levels up to 79 dBA over 3 to 10 hours (depending on the difficulty of the activity). Although the Proposed Project would incorporate several new methods of bank repair, potential noise effects associated with implementation are anticipated to remain the same.

Management of Animal Conflicts and Minor Maintenance

As described in Chapter 2, *Project Description*, these proposed maintenance activities would occur as needed and would not be projected activities. Management of animal conflicts would involve trapping or baiting to remove unwanted species (e.g., ground squirrels), or other means of control to discourage unwanted behavior. Such methods are not expected to be a significant source of noise to adjacent receptors. Similarly, the majority of minor maintenance activities are not considered significant sources of noise (i.e., trash and debris removal, fence repair, graffiti removal, and obstruction removal). On occasion, machinery may be required to remove in-channel sediment or debris, or grade maintenance roads; however, such actions would be relatively small in scale and shorter in duration than identified for the activities above. As such, noise emissions from heavy equipment associated with minor maintenance would be similar to that described for sediment removal activities; however, the overall duration and extent of use would be substantially less.

Canal Maintenance

Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for other routine maintenance work.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize temporary exposure of the public to noise levels in excess of city or county standards. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-36: Public Outreach
BMP GEN-38: Minimize Noise Disturbances to Residential Areas

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Conclusion

Maintenance work under the Proposed Project would be a transient activity, and permanent changes in the existing noise environment would not result. Instead, effects would be analogous to construction-type noise, the significance of which would be determined by applicable construction-noise related policies and its potential to disturb adjacent receptors. In general, bank stabilization work would result in the greatest noise generation, though this type of work usually would occur in varied locations over the period of the Proposed Project. Other work activities (sediment removal and vegetation removal) may repeat two or three times in the same location over the 10-year SMP Update. Although in general, activities in the Proposed Project would represent a continuation of activities undertaken by SCVWD since implementation of the 2002 SMP EIR, the Proposed Project also would include work areas that were not projected in 2002 and where maintenance would not have been done in the recent past. However, the types and relative distances of sensitive receptors to SCVWD facilities would not differ substantially throughout the Project Area, and estimated noise levels associated with activities would be substantially similar for all locations.

Based on the noise estimations and the close proximity of adjacent property boundaries to SCVWD facilities (some less than 50 feet), stream maintenance activities could increase ambient noise levels by 3 dB or more (a noticeable increase), and/or result in exterior noise levels in excess of 75 dBA. These increases would be considered potentially significant in the context of the adopted noise policies within the Project Area, even though they would be temporary and, in some cases, conducted at the request of a homeowner, and even though this work would be exempted from the standards in some jurisdictions (Table 3.9-4). Overall, this impact would be significant. With the implementation of the above BMPs, the Proposed Project would minimize noise disturbances to residential areas but would still exceed several adopted ordinances in the Project Area. Additional mitigation, such as use of hay bales as temporary sound barriers, would not be considered feasible, as they would block access along many of the access roads and impede movement of maintenance equipment. No feasible mitigation is available to further reduce the significant and unavoidable impact associated with temporary noise impacts from SMP Update activities to a less-than-significant level. Therefore, Impact NZ-1 would remain significant and unavoidable.

Mitigation Measures: No mitigation is feasible.

Impact NZ-2: Generate Groundborne Vibrations (Significance Criterion B; No Impact)

The Proposed Project would not utilize heavy equipment that would generate groundborne vibration and affect local residents.

Bank Stabilization/Sediment Removal

Bank stabilization and sediment removal activities typically would involve the use of heavy machinery and equipment, such as bulldozers, excavators, dump trucks, gradalls, and tractor mowers. These activities would not require the use of any vibration-generating equipment, such as pile drivers. Any groundborne vibration associated with heavy

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equipment would be very minor and localized, and this activity would have no impact on the surrounding land uses.

Other Maintenance Activities

All other SMP Update activities may require the use of heavy equipment similar to that utilized for the bank stabilization/sediment removal activities, and the effects of this equipment use would be similar to that described for bank stabilization/sediment removal.

Conclusion

The Proposed Project would not involve pile driving or other activities that would produce substantial groundborne vibrations. No impact would occur, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact NZ-3: Temporary Substantial Increase in Noise above Ambient Levels (Significance Criterion C; Significant and Unavoidable)

Temporary use of heavy equipment (e.g., bulldozers, dumptrucks) for the Proposed Project could result in noise levels greater than ambient conditions. As a standard operating procedure, the District would use sound barriers around stationary generators when working near homes, to decrease the noise because this equipment typically runs 24 hours a day.

Bank Stabilization/Sediment Removal

Bank stabilization and sediment removal activities would involve the use of heavy equipment that would result in increases in the ambient noise levels, as discussed under Impact NZ-1. The anticipated noise levels could increase by 3dB or more above the ambient level near the maintenance site, which would represent a noticeable increase in noise. However, these increases would be of short duration and infrequent, and typically would last from 1 day to up to 10 days for sediment removal activities at any given location. However, in some instances, sediment removal activities could persist for a longer duration at a given location (e.g., up to 6 weeks in limited cases).

Other Maintenance Activities

Other SMP Update activities (vegetation management, management of animal conflicts, minor maintenance, and canal maintenance) also could require the use of heavy equipment or hand-held equipment that would generate temporary increases in the ambient noise levels, resulting in similar impacts as described previously for bank stabilization and sediment removal. The duration of these activities also would be short-term and would be expected to last less than the duration of bank stabilization and sediment removal activities.

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Applicable Best Management Practices

The following BMPs would be implemented as part of SMP Update activities to keep temporary substantial increases in noise above ambient levels to a minimum. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-36: Public Outreach
BMP GEN-38: Minimize Noise Disturbances to Residential Areas

Conclusion

Because the Proposed Project would include noise-reducing measures and the notification of maintenance activities to residences, businesses, or other sensitive receptors, and noise generated in any one location would be short-term, this impact would generally be less than significant and no mitigation would be required. However, in some cases, these temporary impacts would persist for a longer period at a given location (e.g., sediment removal activities lasting longer than 3 weeks). In these cases, this impact would be considered significant. As described under Impact NZ-1, mitigation such as temporary sound barriers would be infeasible. Thus, this impact would be significant and unavoidable.

Mitigation Measures: No mitigation is feasible.